

March 30, 2007

**B-19J**

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**RE: Draft Environmental Impact Statement, Minnesota Steel Industries Taconite Mine and Steel Mill Project, CEQ # 20070047**

Dear Mr. Ahlness and Mr. Ek:

I am writing to provide the U.S. Environmental Protection Agency's (EPA) comments on the draft Environmental Impact Statement (EIS) for the Minnesota Steel Industries (MSI) taconite mine and steel mill project under the National Environmental Policy Act (NEPA), and Section 309 of the Clean Air Act. The project involves an open pit taconite mine operation, ore processing, and a related steel mill. The project is located in Itasca County, Minnesota, near Nashwauk, at the western end of the Mesabi Iron Range.

**Project Background Summary:** Project features include: the open pit mine, adjacent stockpile areas, and a new tailings basin on the site of a former tailings basin. The project also includes construction of new facilities for processing ore and producing steel: a crusher, a concentrator, a pellet plant, and a plant for producing direct reduced iron. The steel mill consists of two electric arc furnaces, two ladle furnaces, two thin slab casters, and a hot strip rolling mill. The purpose and need for the project is to mine taconite ore and produce steel on site in order to provide steel product to the domestic and world market. The project is proposed for a 20-year period and is planned to produce about 13 million metric tons of ore per year and 2.5 million metric tons of steel slabs per year.

**Project Alternatives and Impacts:** The MSI DEIS was prepared jointly by the Army Corps of Engineers (Corps), as the lead federal agency, and the Minnesota Department of

Natural Resources (MDNR), under the Minnesota Environmental Policy Act. EPA was involved at the scoping stage of this project and has provided input at several informal and intermediate stages at the request of the Corps. The DEIS presents a preferred alternative that would use the existing Butler tailings facility, rather than a new site, and dispose of sanitary waste at the Nashwauk wastewater treatment plant, rather than building an on-site wastewater treatment system. The project would have direct impacts to approximately 765 acres of wetlands. It will also require de-watering existing mine pits that feed local streams and lakes; MSI proposes to augment water bodies affected by the dewatering. The project is within 200 miles of four Class I air quality areas, designated to protect visibility in national parks and forests.

**Project Rating:** Based on our review, we have rated the draft EIS for the project **“Environmental Concerns – Insufficient Information (EC-2).”** Enclosed documents contain EPA’s comments and an explanation of the rating system. We have identified areas where additional information is needed to either resolve EPA’s concerns or further evaluate environmental impacts. In summary, we have concerns about the wetlands classification and mitigation, water quality impacts, air quality impacts, tribal resource uses, evaluation of connected actions, and ground water evaluation.

Thank you for the opportunity to review and provide comments on the MSI mining and steel mill DEIS. If you have any questions or would like to discuss our concerns and recommendations, please contact me at 312-353-1441 or Anna Miller of my staff at either [miller.anna@epa.gov](mailto:miller.anna@epa.gov) or (312) 886-7060.

Sincerely yours,

*/s/ Jerri-Anne Garl*

Jerri-Anne Garl, Director  
Office of Science Ecosystems and Communities

Enclosures

cc: Ann Foss, Minnesota Pollution Control Agency

**EPA Region 5 Comments for the  
Minnesota Steel Industries Mine and Steel Mill Project  
Draft Environmental Impact Statement (DEIS)  
March 2007**

**Alternatives analysis**

We appreciate the thorough alternatives analysis prepared for the DEIS. While certain parts of the project, such as the mine pit itself, are fixed, other project features have the potential for different locations. Our review found that the proposed locations of the ore processing facilities, steel mill, stockpiles, and tailings basin considered wetland avoidance and mitigation. Overall, we found the selected alternatives for wastewater treatment, the processing and plant facilities locations, and the tailings basin site acceptable.

**Consultation with U.S. Fish and Wildlife Service (USFWS)**

Results of USFWS consultation should be summarized in the Final EIS (FEIS).

**In-pit stockpiling alternative**

In-pit waste rock stockpiling is an alternative dependent on many factors, such as mineral rights, how the mine pit is worked, and mine pit capacity. The DEIS indicates that the feasibility of in-pit stockpiling is not yet known. (See page 3-11); however, the DEIS later discusses in-pit stockpiling as mitigation (page 4-149). Since the alternative's feasibility is not known yet, we recommend the FEIS present it as provisional only, and not definitively factor it into mitigation or minimization.

**Connected actions**

The DEIS is not clear about whether impacts due to connected actions are included in the overall impact totals. These connected actions include: gas line construction, electrical power lines, public roadway, railroad extensions, and water/sewer lines. Because these infrastructure projects are considered connected activities under NEPA, their impacts should be included and evaluated, even though other agencies or entities will permit or undertake these activities. As noted in the DEIS, 40 CFR 1508.25 states that connected actions are actions that are interdependent parts of a larger action and depend on the larger action for their justification.

For connected actions (listed on page 2-2 in table 2.2 Environmental Review and Permits for Connected Actions), we recommend that the FEIS:

- Include a discussion of the impacts due to connected actions in each of the appropriate media sections in 4.0 Environmental Consequences.
- Quantify acres and community type of wetlands impacted by connected actions, and explain whether the wetlands are previously disturbed or not. We understand, however, that avoidance and mitigation may be better addressed during the permitting phase for these connected actions and, if so, recommend the FEIS state that.

## **Wetlands**

Classification System: Instead of using the Circular 39 system, EPA recommends using the Eggers and Reed system (1997) or the Cowardin Classification System. Both Eggers and Reed and Cowardin provide more specific plant community information that will be useful and necessary to determine adequate mitigation. We recommend their use to identify wetland impacts as well as to describe the wetland communities to be established for mitigation. We also request that the wetland impact summary tables 4.1.9 and 4.1.10 include the total acres of wetland impacted by community type using the Eggers and Reed or Cowardin system.

The use of the Circular 39 classification system to describe the wetlands impacted is problematic because it does not provide sufficient information on the wetland types being impacted. For example, Circular 39 Type 7 (wooded swamp) does not distinguish between hardwood swamps and coniferous swamps, which are two very different types of plant communities. Similarly, Circular 39 Type 2 does not differentiate between sedge meadow and calcareous fen - these are distinctly different wetland community types and each would be assessed differently regarding what constitutes adequate mitigation.

Natural vs. disturbed wetlands: The DEIS refers to wetlands of natural origin and wetlands of artificial origin, without defining the distinction. We suggest defining these terms in the FEIS. In addition, we recommend clearly identifying natural, artificial and disturbed wetlands by acreage rather than by percents for discrete project segments. This will help readers and decision-makers understand impacts.

Mitigation ratios: The DEIS proposes at least a 1:1 mitigation replacement ratio and indicates that the initial wetland mitigation work should be completed within 5 years. Although hydrology may be re-established in this time frame, the site is unlikely to be a fully functional wetland in 5 years. Due to the time lag between the impacts and the full restoration of functioning wetlands, we request a mitigation ratio of at least 1.5:1 for emergent and scrub shrub communities. We also note that the proposed project will impact approximately 32 acres of forested wetland. The DEIS does not indicate if the impacted areas are hardwood or coniferous forested wetlands. In either case, due to the length of time needed for forested systems to be restored, we request that all forested wetland impacts be mitigated in kind at a 2:1 ratio.

Indirect impacts to wetlands: The DEIS states that since the extent of potential indirect wetland impacts are not precisely known, mitigation for indirect impacts is undefined. To define indirect impacts, EPA supports adding the monitoring measures listed on page 4-30 as Clean Water Act (CWA) Section 404 permit conditions. Those measures are: (1) additional monitoring wells near mine pits where indirect impacts due to de-watering could occur, and (2) long-term wetland hydrology monitoring. EPA will discuss these measures further with the Corps during the Section 404 permit phase.

In-kind mitigation: The proposed wetland mitigation includes a 5-year plan and an additional 20-year plan. Although the proposed mitigation is difficult to assess since the mitigation discussion uses the Circular 39 classification system (see comments above),

we conclude from our review that the proposed mitigation will not result in in-kind replacement of wetland type. The majority of the proposed restoration appears to be either shallow or deep marsh or shallow fresh water, which does not reflect the composition of wetland community types to be directly impacted. Specifically, the mitigation at this site would result in more open water wetland systems, while providing very little forested or scrub shrub wetland habitat. EPA expects to continue discussions of in-kind mitigation with the Corps during the Section 404 permit process.

To ensure adequate mitigation, we recommend establishing a timeline indicating the type of wetlands to be impacted in each watershed as the project moves forward. This information can then be used to guide decisions regarding the most appropriate types of wetland communities to be restored in the 5-year and 20-year mitigation plans.

Concerning the Aitkin 229 and 248 sites, the DEIS provides little information on how wetland hydrology will be re-established and maintained on this mitigation site. The DEIS is also unclear how much, if any, management of water levels will be required to maintain the target wetland communities. Since the mitigation plan proposes to let vegetation naturally establish on the mitigation sites, we recommend that the CWA Section 404 permit establish interim performance standards that require seeding and/or planting the mitigation areas if the target wetland communities do not develop within several growing seasons. We also recommend that the mitigation plan include performance standards for the sites, both for vegetation and hydrology. A conservation easement should immediately be established over the mitigation areas. The plan should designate a long-term manager of the mitigation areas.

Approximately 140 acres of wetland restoration is proposed at Aitkin Site 1981 on land originally developed for farming. Initial wetland restoration planning for this site was conducted between 2003 and 2005, but no restoration work has actually been completed. This site appears to have the potential to provide restoration opportunities for forested and/or scrub-shrub communities. We recommend the FEIS include a complete restoration plan that clearly indicates the wetland communities to be established on the site, how the wetland vegetation will be established, and how hydrology will be restored. We also suggest including recent wetland delineations (those completed in the last three years) be available for review.

Mitigation credits: For proposed additional wetland mitigation at several other sites, including the proposed 150 acres of re-established wetlands in the tailings basins, the project may likely receive full mitigation credit. The mitigation plan also appears to rely on full (100 percent) credit for forest road decommissionings (projected to result in 88 acres of re-established wetlands), which we understand to be part of the Chippewa National Forest's long-term management plan. Under the Section 404 process, MSI can receive up to 25 or 50 percent credit for projects that are independent of the MSI mitigation plan, such as the Chippewa National Forest road removals.

#### **Impacts to local hydrogeology and drinking water sources**

The FEIS should demonstrate whether mine pits and ground water are or are not interconnected, to support the DEIS statement that de-watering will not have adverse

affects. The results of a ground water analysis should be included in the FEIS, along with supporting maps and cross-sections, as well as a map showing public and private well locations. In particular, we recommend explaining the ground water flow regime near the Hawkins/Halobe/Hadley Pits, which are approximately 200 yards from the Nashwauk City public water supply well #2. These materials will allow reviewers and the general public to understand the potential for impacts to water supplies. The FEIS should also discuss proposed monitoring to detect any impacts to the public or residential wells due to pit de-watering.

We note that Pickerel Creek originates from a spring-fed stream; the FEIS should address whether it will be affected by de-watering.

### **Underground injection control (UIC)**

While we understand that the on-site wastewater treatment system is not the preferred alternative, should this alternative be selected, it will require a permit as a Class V well under the Safe Drinking Water Act UIC program. The FEIS should include the potential for a UIC permit in its discussion of this alternative. In the State of Minnesota, the UIC program is directly implemented by EPA. We would require an inventory to determine if the system would need an individual permit or be authorized by rule.

### **Water discharges and water quality**

We recommend the FEIS discuss whether or not a National Pollutant Discharge Elimination System (NPDES) is necessary for stream and lake augmentation activities. Generally, augmentation would require an NPDES permit, but the DEIS does not identify a permit for this activity. The DEIS states that all waters meet the state water quality standards; however, in the absence of specific information about chemistry and temperature of the individual pit waters, we are concerned that surface water quality of receiving water bodies (Snowball Lake, Oxhide Lake, Swan lakes, and Oxhide Creek) may be affected by the addition of nutrients (i.e. phosphorus) or sulfates or by changes in temperature due to water transfers or augmentation. We recommend the FEIS provide more information about water chemistry of the pits and discuss possible changes due to inflows from dewatering or augmentation.

Information on page 4-56 states that in the area surrounding the processing plant, surface water would be collected and discharged to a wetland southeast of the processing plant, although the DEIS states elsewhere that no surface water discharges will occur from this project. The FEIS should explain whether this discharge requires an NPDES storm water permit or is otherwise regulated.

We recommend including the following information in the FEIS:

- Page 4-47, Section 4.3.2.2: Oxhide Lake: Will proposed increases and decreases in lake levels cause erosion of the banks or other impacts, or are these fluctuations within the natural range for this lake?
- Page 4-47, Section 4.3.2.2: Snowball Creek: the DEIS mentions that in the post-mining period, the level of Snowball Creek may increase to the point where Pit 6 may not continue to discharge into the creek. This appears to mean that creek levels may not return to pre-mine levels, which differs from statements elsewhere

in the DEIS. We recommend clarifying in the FEIS whether the creek levels will or will not return to pre-mining levels.

- We note that Page 4-39, at the end of the first paragraph, refers to additional water appropriations that are likely in the future. The FEIS should be clear about this as a future action and discuss sources and possible impacts.

### **Risk levels and subsistence consumption**

#### Cancer risk levels:

While we acknowledge that the DEIS has used Minnesota's approved cancer risk level of 1 additional cancer in a population of 100,000 people ( $1 \times 10^{-5}$ ), we suggest that the State regulators consider using the more protective level of 1 additional cancer in a population of 1,000,000 people ( $1 \times 10^{-6}$ ) to characterize possible impacts to subsistence fish consumers in the area of the project. We suggest considering the ( $1 \times 10^{-6}$ ) cancer risk level because of the following reasons:

- In 2000, EPA's water quality standards program recommended the use of the more protective ( $1 \times 10^{-6}$ ) cancer risk level when deriving criteria for several cancer-causing pollutants (see Federal Register, Vol. 65, No. 214); some of these pollutants occur in the project area and are evaluated in the DEIS.
- The Grand Portage Tribe has EPA-approved water quality standards and uses the updated recommended risk level of ( $1 \times 10^{-6}$ ) and has treaty rights to consume fish in the area of the project.
- If subsistence fish consumers (not only tribal members) will also be consuming produce similar to the subsistence farming levels in the area, then additional exposure to these pollutants and cancer risk could occur. In the DEIS, subsistence fish consumers are expected not to exceed the ( $1 \times 10^{-5}$ ) cancer risk level for Arsenic, Benzo(a)pyrene, and Dibenzo(a,h)anthracene (the expected rate was 0.8 in 100,000). If they consume produce similar to higher subsistence farming levels in the area, however, instead of the lesser residential levels, as assumed in the DEIS, they could possibly exceed the ( $1 \times 10^{-5}$ ) rate.

Non-cancer risks: We recommend that the FEIS include a discussion of the potential non-cancer health effects due to mercury, because the DEIS indicates that exposures may potentially pose non-cancer health risks for subsistence fish consumers (page 4-118). Combined mercury exposure figures - existing mercury exposure levels added to potential incremental increases due to the MSI project - appear to indicate that subsistence fish consumers may have a higher potential for non-carcinogenic health risks due to mercury (see Table 4.7.22). We also recommend that the FEIS consider presenting a similar exposure analysis for other pollutants with non-cancer effects to fully describe the project's potential impacts.

### **Tribal uses and impacts**

While the DEIS identifies impacts to nearby resources (including those in tribal ceded territories), it does not identify all relevant tribal uses or assess potential impacts to those uses. In particular, the DEIS does not investigate wetland resources potentially used by the Tribes. Possible uses include harvesting wild rice, medicinal wetland plants, and

plants used for basket-making (e.g. reeds, willow, birch), as well as hunting and trapping wildlife such as fishers and beaver. There may be other cultural uses in the area, such as sweat lodge ceremonies, which could be affected particularly by noise from the mining activities. Project-related or cumulative wetlands loss, water quality changes, air quality changes, or noise could potentially affect resources and uses that are important to the tribes. We recommend the Final EIS better define tribal uses in the project-affected area and explain potential impact to these uses. We suggest coordinating with tribal governments on these issues.

### **Air emissions**

The DEIS uses sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) background concentrations from a 1999 permit application (for an unrelated facility) for modeling this project's impact. The FEIS should explain why more recent data wasn't used and how the impacts evaluation accounted for changes in emissions from any additional emission sources since 1999.

The discussion of boilers under Industrial, Commercial and Institutional Boiler Maximum Available Control Technology (MACT) does not identify a control for the vacuum degasser boiler (pg. 4-85). The National Emission Standards for Hazardous Air Pollutants (NESHAP) requires boilers to install a continuous emissions monitoring system (CEMS) to track carbon monoxide (CO) emissions. The DEIS should clarify whether a CEMS is needed or whether the boiler is exempt. Since the Minnesota Pollution Control Agency (MPCA) does not have delegated authority for the Boiler MACT, EPA would need to make any case-by-case determination of its applicability. EPA will work with MPCA if a case-by-case determination is necessary.

Although the DEIS states that the furnace will use 100% direct reduced iron (DRI), it identifies that in-house scrap will likely be added to the furnaces. We recommend the DEIS clearly state whether furnaces will use in-house scrap in addition to DRI and clarify whether the addition of in-house scrap will change emissions.

We recommend the FEIS cumulative impacts assessment describe, at least generally, the fate of the mercury that is not deposited locally, since the DEIS notes that about 93% of project mercury emissions are expected to be elemental mercury, which typically does not deposit locally near the source (see page 4-99).

EPA advises using clean diesel technology and fuels for construction and operational vehicles and equipment at this facility. We recommend any clean diesel commitments be included in the FEIS and the Record of Decision (ROD).

### **Risk assessment**

The DEIS provides a summary of the results of the Human Health Screening-Level Risk Assessment (HHSRA) (May 2006). We reviewed the HHSRA and are providing comments insofar as it affects conclusions in the DEIS.

Certain compounds were eliminated from consideration in the risk assessment due to lack of emission rate data or due to lack of an approved toxicity value (pgs. 35-36; also



mentioned in the DEIS, page 4-103); we can provide the relevant values. In particular, the dose/response non-cancer toxicity values for acenaphthylene can be found on the Integrated Risk Information System (IRIS). Toxicity values for ferrochromium and ferromanganese are listed under Chromium Compounds and Manganese Compounds.

We recommend the FEIS identify whether the pellet plant may emit manganese. If manganese emissions are likely, we recommend that the HHSRA and the DEIS discuss the possible effect of manganese and consider it as a chemical of potential interest (COPI) in the section discussing metal bioavailability and bioaccessibility in the risk assessment.

We recommend adding the following information into the risk assessment and FEIS: a discussion of how lead impacts were modeled (in the HHSRA section), soil ingestion rates, model default numbers, and age-dependent categories. In addition, we recommend defining background lead levels in the risk assessment.

### **Solid and hazardous waste**

Since the project may include an on-site construction debris landfill, the FEIS should include information on possible impacts from the facility, as well as regulatory requirements for the facility, such as monitoring.

We recommend including information in the FEIS on whether these waste streams described on page 40-71 to 72 (Table 4.6-2: Description of Solids, Sludges, and Hazardous Wastes) are exempt under the Resource Conservation and Recovery Act. Though, the DEIS assumes wastes associated with steel mill, kiln and DRI refractory operations and slag will be non-hazardous based on results from other mine projects, we suggest that the FEIS and the ROD include a commitment to test wastes in this facility once it is operational to confirm whether these waste streams are non-hazardous.

We request that the FEIS describe the post-closure care of solid waste management facilities.

### **Cumulative impacts**

Regarding foreseeable projects:

- Table 5.3.1: List of Proposed Projects (page 5-19) should include the Mittal Steel and US Steel/Minntac projects, as well as any current facilities in the area.
- Future Reasonably Foreseeable Conditions (page 5-33) should include and consider all of the projects listed in Tables 5.3.1 and 5.4.1.

We note that data in Table 5.4.1: Maximum Potential emissions Page (5-25) is blacked out. We recommend the blacked out data be added in the FEIS.

**Note:** Page EX-8 refers to a permit by MPCA and EPA. The reference to EPA should be deleted, since MPCA has authority for implementing the Clean Air Act in Minnesota.